

REMARKS.

General remarks.

Claims 1-49 are all the claims pending in the application. The Examiner has withdrawn claims 43-45 from further consideration. Applicant herein amends the specification to correct some minor informalities and to enhance its idiomatic English. No new matter has been added.

The objection to the specification.

Applicant respectfully requests the Examiner to withdraw the objection to the disclosure in view of the above-identified self-explanatory correction to the informality on page 30.

The objection to the drawings.

The Examiner objected to the drawings, requiring that Figs. 27 and 28 be designated by a prior art legend. Applicant respectfully requests the Examiner to withdraw this objection in view of the Proposed Drawing Correction being filed herewith.

The Examiner required that through bore 38a be shown. This is also taken care of in the enclosed Proposed Drawing Correction in Fig. 2.

The objections to the claims.

Applicant respectfully requests the Examiner to withdraw the objection to the claims in view of the self-explanatory claim amendments shown above. Applicant respectfully requests the Examiner to examine claims 37-42 on the merits.

The rejection under 35 U.S.C. § 112, ¶2.

The Examiner rejected claim 36 under 35 U.S.C. § 112, ¶2 for indefiniteness. In particular, the Examiner indicated that a particular requirement in the claim lacked antecedent basis. Applicant has appropriately amended this claim, and therefore respectfully requests the Examiner to withdraw this rejection.

Claims indicated as being allowable.

The Examiner indicated that claims 27 and 29-32 were objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Applicant has so rewritten these claims, and therefore respectfully requests of the Examiner their allowance.

In particular, Applicant has rewritten claims 27, 29, and 30 in independent form, and respectfully requests the Examiner to allow these and also dependent claims 31/30 and 32/30.

The prior art rejections.

The rejection of claims 1-26, 28, 33-36, and 46-49.

The Examiner rejected claims 1-26, 28, 33-36, and 46-49 under 35 U.S.C. § 103(a) as being unpatentable over Shinada in view of Barinaga and Seccombe. This is all of the claims, except those indicated as being allowable, and those not examined for being in improper multiple dependent form.

The Barinaga reference is the reference discussed in Applicant's description of the background of the invention at page 3, line 1 of Applicant's originally-filed specification.

In making this rejection, the Examiner admitted that the Shinada base reference does not teach or suggest the valve member. The Examiner relied on Shinada for its general teaching of an ink cartridge having inside it a porous member, and having a packing member. The Examiner relied on Barinaga to compensate for most of the deficiencies of Shinada, and asserted that the Barinaga ball meets nearly all of the requirements of the claims relating to a valve member (page 8 of the Office Action). The Examiner asserted that Barinaga's passage 28 in Fig. 2 is a guide member.

Seccombe is relied upon for its teaching of a valve member with a shape generally like that frequently depicted in Applicant's drawing figures. Compare, e.g., Seccombe's part 84 in Fig. 9 with Applicant's part 10 in Applicant's Fig. 2.

The application has 10 independent claims, 9 of which are not withdrawn from consideration. Each is discussed in turn.

Independent claim 1.

Claim 1, as now amended, patentably distinguishes over all three applied references in view of its requirement for:

a valve device contained in said ink supply port elastically abutting against said packing member, said valve device selectively opening and closing said ink channel in conjunction with the ink supply needle; wherein said valve device does not comprise a sphere.

With this Amendment, Applicant has limited claim 1 with the further requirement that the valve device not be a sphere. This requirement is well-supported in the originally-filed specification, and the specification describes how the use of a sphere is disadvantageous. See page 3, line 16-20 (complexity of manufacture) and page 4, lines 11-22 (instability, expansion of through hole, etc.). These disadvantages show the criticality of this requirement.

Shinada does not teach or suggest a valve member at all. The Barinaga valve member (as discussed in Applicant's own specification) is a sphere. Seccombe does not teach or suggest that the Barinaga sphere should not be used. Taken together, for what they would have meant as a whole to an artisan of ordinary skill, the combined teachings of these three references could not have reasonably motivated an artisan of ordinary skill to have departed from the Barinaga sphere. None of these references recognizes the problems associated with the use of such a valve. Any ink jet cartridge produced according to the teachings of Shinada, Barinaga, and Seccombe would necessarily have included a sphere.

Applicant respectfully submits that therefore an artisan of ordinary skill would not have (and could not have) produced an ink cartridge meeting the requirements of claim 1, as now amended, from the combined teachings of Shinada, Barinaga, and Seccombe. Applicant therefore respectfully requests the Examiner to withdraw this rejection of claim 1, and also its seventeen dependent claims (namely, 10/1, 11/10/1, 12/11/10/1, 36/11/10/1, 13/10/1, 14/1, 15/14/1, 16/1, 43/16/1, 44/43/16/1, 17/1, 37/1, 38/1, 39/38/1, 40/39/38/1, 41/40/39/38/1, and 42/38/1).

Claim 2.

Independent claim 2 has been amended in a manner substantially the same as claim 1, and therefore Applicant respectfully submits that the comments made above with respect to this rejection of claim 1 apply with equal force here. For the same reasons as set forth above, therefore, Applicant respectfully requests the Examiner also to withdraw this rejection of independent claim 2, and its 12 dependent claims (i.e., 3/2, 10/2, 11/10/2, 12/11/10/1, 36/11/10/2, 13/10/2, 37/2, 38/2, 39/38/2, 40/39/38/2, 41/40/39/38/2, and 42/38/2).

Claim 4.

Independent claim 4 also has been amended as claim 1 to overcome valves like that according to the Shinada/Barinaga/Seccombe combination in which the valve comprises a sphere. For the same reasons as set forth above with respect to this rejection of claim 1, Applicant respectfully requests the Examiner also to withdraw this rejection of claim 4 and its eleven dependent claims (i.e., 10/4, 11/10/4, 12/11/10/4, 36/11/10/4, 13/10/4, 37/4, 38/4, 39/38/4, 40/39/38/4, 41/40/39/38/4, and 42/38/4).

Claim 5.

Independent claim 5, as now amended, requires:

a valve device contained in said ink supply
port elastically abutting against said
protruding rim of said packing member ...

The claim as originally-filed included a requirement for the packing member to have a protruding rim. This claim has been amended to clarify that the valve device abuts against the protruding rim of the packing member. This is not new matter. One example of this cooperation in the originally-filed specification may be quickly noted in Applicant's Fig. 2, where valve member 10 abuts protruding rim 34 of packing member 8.

In making this rejection, the Examiner admitted that Shinada does not include a valve member, but asserted that Barinaga compensates for this deficiency and furthermore includes a packing member with a protrusion 104 that is readable as a protruding rim.

Applicant understands the Examiner's duty to read the prior art broadly during prosecution, but respectfully submits that, as now amended, independent claim 5 clearly distinguishes over the Examiner's prior reading. In particular, the protrusion 104 in Barinaga Fig. 2 does not touch the Barinaga spherical valve 102 at all.

Seccombe lacks any protruding rim on any packing member, and thus the combined teachings of Shinada / Barinaga / Seccombe would seem to lack any teaching or suggestion whatever of such a feature. Therefore, Applicant respectfully requests the Examiner to withdraw this rejection of independent claim 5, as now amended, and its thirteen dependent claims (i.e., 6/5, 7/6/5, 10/5, 11/10/5, 12/11/10/5, 36/11/10/5, 13/10/5, 37/5, 38/5, 39/38/5, 40/39/38/5, 41/40/39/38/5, and 42/38/5).

Independent claim 8.

Independent claim 8 has not herein been amended. Applicant respectfully requests the Examiner to reconsider this rejection. Claim 8 requires that the valve device have:

a valve body contacting with said packing member and comprising a substantially flat surface with which the ink supply needle contacts ...

It seems from page 9 of the Office Action that the Examiner asserts that Seccombe discloses a substantially flat surface (bottom surface of 90 is flat, Fig. 9). Indeed, the bottom surface of 90 may be flat in Seccombe. However, the current claim 8 recites "a substantially flat surface with which the ink supply needle contacts." This recitation is not met by Seccombe, because the valve in Seccombe is not one which ever contacts the needle. The spherical surface in Barinaga does contact the needle, but is not substantially flat. It is difficult to see how the combined teachings of Shinada / Barinaga / Seccombe could somehow have resulted in the cartridge described in independent claim 8, and Applicant therefore respectfully requests the Examiner to reconsider, and to withdraw this rejection of claim 8. Applicant also respectfully requests the Examiner to withdraw this rejection of the corresponding dependent claims, namely 33/8, 34/33/8, 35/8, 36/8, 38/8, 39/38/8, 40/39/38/8, 41/40/39/38/8, and 42/38/8.

Independent claim 9.

Claim 9 patentably distinguishes over the prior art in view of its requirement for:

a guide body for guiding said valve body to
slide substantially vertically with respect
to said packing member.

In making this rejection, the Examiner asserted that this requirement was met by the Barinaga reference. In the Barinaga reference, Fig. 2 shows a tube 28 that guides the ball 102 with respect to the packing member. Although the drawing figure of Barinaga appears to show that the guiding is substantially vertical, the Barinaga text gives a better insight.

The structure of Barinaga requires that "[t]he sealing ball 102 is sized such that it can move freely within the boss 99 and allow the flow of ink around the ball when it is not in the sealing position." Were this not the case, no ink could flow. In this view, Barinaga inherently has a problem, which is discussed in the background part of Applicant's originally-filed specification. Namely, *the relative position between the ball and the spring is unstable*. The ball has very substantial free movement in the horizontal direction in Barinaga.

Looking again at Barinaga Fig. 2, it can be seen that there is an important amount of horizontal travel discernible even in the not-to-scale drawing. The Barinaga guide cannot reasonably be said to guide the ball substantially vertically. Although the Barinaga guide does guide the ball vertically, the claim requires "substantially" vertically and Barinaga cannot be said to meet this requirement.

None of the three applied references meets this requirement, and Applicant finds in their combined teachings no teaching or suggestion that would have enabled an artisan of ordinary skill to have achieved such an ink cartridge. Therefore, Applicant respectfully requests the Examiner to kindly reconsider, and to withdraw, this rejection of independent claim 9 and also its seventeen dependent claims (i.e., 18/9, 19/18/9, 20/18/9, 21/9, 22/21/9, 23/21/9, 24/9, 25/9, 26/9, 28/9, 33/9, 34/33/9, 38/9, 39/38/9, 40/39/38/9, 41/40/39/38/9, and 42/38/9).

Referring to claims 46, 48 and 49, the response for claims 1, 8 and 9 discussed above are also applicable to these claims.

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Independent claims 46, 48, and 49.

Independent claims 46, 48, and 49 are substantially the same as claims 1, 8, and 9, respectively, but relate to a printer including the inventive printer cartridge. Claim 46 has been amended to exclude a sphere from the valve member.

The above comments with respect to the patentability of independent claims 1, 8, and 9 thus apply equally to claims 46, 48, and 49. For these same reasons, therefore, Applicant respectfully requests the Examiner to withdraw this rejection of independent claim 46 and its dependent claim 47, and of independent claims 48 and 49.

Conclusion and request for telephone interview.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



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Date: January 30, 2001